DOCUMENT RESUME

ED 418 122 TM 028 216

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TITLE A Review and Critique of CareerScope (tm): Career Assessment & Reporting Software.
PUB DATE 1998-01-22
NOTE 11p.; Paper presented at the Annual Meeting of the Southwest Educational Research Association (Houston, TX, January 22, 1998).
PUB TYPE Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Aptitude Tests; Career Awareness; Career Choice; *Career Guidance; *Computer Software; Computer Uses in Education; *Interest Inventories; Norms; Scoring; Secondary Education; Student Evaluation; Test Format; Test Reliability; *Test Use; Test Validity; *Vocational Interests
IDENTIFIERS *CareerScope Assessment

ABSTRACT

CareerScope is a career assessment and reporting package in a Windows or Macintosh format. It combines an aptitude battery (APTICOM) with an occupational interest inventory, both developed by the publisher, Vocational Research Institute. CareerScope is self-administered and can be used to accommodate one individual or a group depending on the number of computers available. Results include a Counselor's Report, which shows raw data from the interest inventory and results from the aptitude battery, and the Assessment Profile, designed to be presented to the test taker at a counseling session. The ease of administration, scoring, and interpretation make CareerScope conducive to many practical uses. Since scoring by the computer is automatic, results are available as soon as the test is completed. The publisher does not provide any information suggesting that new norms were developed or reliability and validity studies conducted for the computer version of APTICOM. New studies should be conducted to replace the information developed from the original (1982) paper-and-pencil version or its 1985 norms. A weakness of the CareerScope approach may be in the need for interpretation by a qualified counselor. The publisher has indicated that new norming, reliability, and validity studies are planned. Information is given about CareerScope cost and administration. (Contains two references.) (SLD)

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A Review and Critique of CareerScope™: Career Assessment & Reporting Software

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TMO28216

A paper presented at the annual meeting of the
Southwest Educational Research Association
Houston, Texas
January 22, 1998

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Title of test:	CareerScope™
Author:	Jeffrey A. Harris, Ph.D.
Publisher:	Vocational Research Institute, Philadelphia, PA
Date of publication:	December, 1996
Time to administer:	Approx. 60 minutes
Cost:	$3,000 per single computer

Purpose and Nature of Test

CareerScope™ is a Career Assessment and Reporting Software package in a PC Windows™ or Macintosh® based format. It combines an aptitude battery and interest inventory into one system. These two components are VRI's APTICOM aptitude test battery and Occupational Interest Inventory. CareerScope™ is self-administered and can be used to accommodate one individual or a group depending on the number of available computers.

CareerScope™ was developed to provide schools, rehabilitation services, industry and job training programs with a valid non-discriminatory cost and time-effective multiple aptitude assessment. It is intended for use in career guidance and counseling processes and in employment and training selection and placement. The APTICOM was first published in 1982 and developed for use by high school students and adults at or above the fourth grade reading level. The APTICOM was developed initially to be administered on a dedicated computer. It was not adaptable to PC compatible or Macintosh computer systems. CareerScope™ has taken the APTICOM and adapted it for such use on other computers. Whereas with the original APTICOM, the test administrator was required to physically manipulate the testing functions from switches and buttons located on the back of the unit (Green, 1994), CareerScope's™ administrator need only get the program to the first computer screen. From that point the test taker is guided through the entire process through on-

screen prompts.

The aptitude definitions used to develop the aptitude test battery were adopted from the U.S. Department of Labor's (DOL) Dictionary of Occupational Titles (DOT), Handbook for Analyzing Jobs and Guide for Occupational Exploration (GOE).

In the first step of CareerScope™ the test taker is asked to provide identifying information. This information includes an identification number (such as the social security number), name, age, and are asked if they are enrolled in a secondary education program. Secondly an orientation to the system is provided to get the test taker oriented to using the computer mouse, clicking on the proper buttons, and navigating through the test. Responding to the items and moving forward and back through the test involves "point and click" with the mouse. Next, the test taker completes the occupational interest inventory of 162 items, specifying "Like", "?" , and "Dislike". The test taker is first given general instructions, practice items, and finally the actual assessment items.

The aptitude test battery is then administered consisting of seven speeded, 30 multiple choice item, tests: (1) Object Identification, (2) Abstract Shape Matching, (3) Clerical Matching, (4) Pattern Visualization, (5) Computation, (6) Numerical Reasoning, (7) Word Meanings.

As in the interest inventory, each aptitude test is preceded by general instructions, practice items, and finally the actual assessment items. The test taker is given a maximum of 90 seconds rest between each test.

When all items are completed the test taker notifies the test administrator who starts the program over again for the next test taker, or goes directly to the test management system to have immediate access to the individual's results. The results come in two reports, the Counselor's Report, and the Assessment Profile. The Counselor's Report provides the raw data from the interest inventory by showing the number of responses answered "Like", "?", or "Dislike" and grouped by

the 12 GOE interest areas. Also reported for each GOE interest scale are the Percentile Total, Percentile Male/Female, and Percent Like. The Aptitude Tests results are reported on two charts. The first identifies each test and reports the number attempted and the number answered correctly. The second chart translates the scores into standard scores, percentiles, and adjusted scores (adjusted for the standard error of measure) and grouped by the General Aptitude Test Battery (GATB) aptitudes as follows: G (Intelligence; General Learning Ability), V (Verbal Aptitude), N (Numerical Aptitude), S (Spatial Aptitude), P (Form Perception), Q (Clerical Perception), K (Motor Coordination), F (Finger Dexterity), M (Manual Dexterity), E (Eye-Hand-Foot Coordination)

Although the CareerScope™ version of APTICOM does not specifically test for K, F, M, and E, the CareerScope™ Management System does enable those scores to be incorporated into the test reports by manually entering such test results from the GATB or other sources.

The final portion of the Counselor's Report is the Work Group Recommendations. Using the 12 interest areas from the GOE, occupations are listed that may be appropriate for the individual being assessed. The Assessment Profile is intended to be provided to the test taker during a counseling session. It contains the same results that are contained in the Counselor's Report, but with more detailed information about what each score means and more detailed descriptions of the occupations listed.

Practical Evaluation

CareerScope's™ ease of administration, scoring, and interpretation make it conducive to many practical uses. The test administrator need only start the system, then wait until the test taker indicates that he/she is finished. The test taker is given easy to read and understand instructions and is guided through the entire process by the computer. Scoring is automatic in the computer and

results are presented in easy to read printouts as soon as the test is completed.

The instructions are easy to follow and the items are clear as to what was being asked. In the Pattern Visualization test, however, I had some problems. The test taker is given a diagram of solid and dashed lines, and is asked to determine the shape of the object when it is folded on the dashed lines. The problem is that the answer selections may be difficult to recognize. The answer areas are gray and the shape that is to be identified is also gray with gray shading and shadows to assist the test taker in determining which selection corresponds to the diagram. The edges run together with the background making it difficult to see the shape. Shaded sides and shadows also run together making identification difficult. J. A. Harris (Personal Communication, January 14, 1998) has indicated that as long as the video driver on the testing computer is set to 640×480, 256 colors, and small fonts, there should not be any difficulties recognizing those shapes. I also believe that persons wearing bi-focal or progressive lens glasses may have more difficulty than others in the Pattern Visualization test, and more difficulty in reading directions with the currently used font and font size.

Several considerations may be of interest when utilizing computers for speeded assessments. Not all systems operate at the same speed. CareerScope™, however, is recommended for a 486 (486/66mhz) or better computer and operates off of the system clock which is not influenced by system speed. Therefore, utilizing computers of faster speeds should have no effect on test results. Another concern may be encountered in the use of the mouse, especially for persons with little or no computer/mouse experience. The answer buttons that the test taker must click on with the mouse, to respond to each item, tend to be relatively small. This may cause the less experienced mouse user to take longer to respond to each item as they may click several times before they actually hit the button. Different mouses also tend to respond and move differently. This is a particular problem on the more highly speeded tests. This problem however is a problem of the operating system not

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that of CareerScope™.

One other concern is the use of the term "secondary education" in the identifying information. The test taker is asked if he/she is now enrolled in a secondary education program. It's not certain how many secondary students understand the term and that it includes them.

Just about anyone can administer the test, however interpretation should be undertaken by a qualified counselor trained in interpreting these results.

The User Guide is helpful for installing the system, working through the various components and understanding the setup. However, while it gave directions on how to terminate a program in progress, and directed that the test taker notify the test administrator when finished, it did not specify what the test administrator was to do to get out of the program when the test has been completed.

Technical Evaluation

The only technical data provided by VRI was from the original APTICOM and occupational interest inventory from 1983 and a renorming sample for the interest inventory in 1985. There was no evidence provided indicating that any renorming or validating was done with the new CareerScope™. As the method of administration of CareerScope™ is much different from that of APTICOM, there should be new norm, reliability, and validity studies conducted based on the PC/Macintosh administered system.

The aptitude test was initially developed and field tested in a paper and pencil format for standardization. Then the tests were administered at various sites throughout the U.S. and internal consistency studies were conducted. Clerical Matching and Computation were administered to 83 students in four sites from Pennsylvania to California. Word Meanings and Numerical Reasoning test were administered to 157 vocational students in Philadelphia, and Object Identification and

Abstract Shape Matching were administered to 82 vocational students in New Jersey. The 1983 validation research sample for the aptitude battery, upon which norms were based, was composed of 417 persons at eight sites throughout Canada and the U.S. and ranged in age from 16 to 60 years. The sample had an education mean of 11.8 years, was 63% Caucasian, 56% female, and 44% male.

Reliability statistics for the aptitude test battery were based upon a research sample of 67 trade school students enrolled in one school in Philadelphia who were retested one week after the initial testing. According to the technical manual, reported reliability coefficients reveal the same pattern of differential stability across aptitude domains as has been reported for the GATB with greatest stability achieved in cognitive areas (G, V, N; r_{tt} = .86), and intermediate stability in the perceptual domains (S, P, Q; r_{tt} = .82).

The APTICOM aptitude test battery and the GATB were administered to each participant for concurrent validity study purposes. Factor analysis was also conducted. Validity coefficients were reported in the technical manual as very high relationships between the APTICOM and GATB measures, (G =.87, V =.81, and N =.82), and high relationships between perceptual aptitudes (S =.67, P =.65, and Q =.66).

The APTICOM Interest Inventory was standardized in 1983 at five sites across the U.S. and included 573 persons that ranged in age from 12 to 24 years. They had an education mean of 11.0 years, were 42% Caucasian, 52.5% male, and 47.5% female. For validity, the interest inventory was correlated with the USES-II. Correlation between the APTICOM interest inventory and the USES-II was moderately high, ranging from .70 to. 85 with 10 of the 12 coefficients above .75.

The 1985 renorming sample for the interest inventory consisted of 1381 persons divided into two groups. The first, termed Prevocational, was composed of secondary school students, and the second, referred to as Vocational, was composed of individuals over 18 years old and no longer in

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secondary school. The combined age range was from 13 to 62 years with an education mean of 11.0 years. The sample was composed of 53.6% Caucasian, 45.4% male, and 54.6% female.

Reliability for the interest inventory was also based on the test-retest method and compared to the USES-II. The APTICOM interest inventory coefficients for test-retest ranged from a low of .74 to a high of .86 with a mean of .83. The mean for the USES-II test-retest coefficients was reported to be .84.

For validity purposes the 1985 sample was compared with the USES-II. Correlations for the Prevocational sample ranged from .64 to. 87, and the Vocational sample ranged from .75 to .91 across the interest areas.

In 1985 the APTICOM Interest Inventory was renormed to establish separate norms for secondary students and adults. Some inventory items were rewritten to create an alternate form with reading demands reduced to a fourth grade level. In order to establish that the rewording of these items did not change the meaning of the items, the original instrument and the revised form with reworded items were both administered to a group of sixty-seven adult-age students enrolled in vocational-technical courses in Philadelphia. Correlation coefficients for these two administrations were reportedly high. The mean correlation across scales was .94, with a range from .89 to .97.

Reviewer Comments

No reviews of Career Scope™ have been found. No reviews of the APTICOM were found in the Mental Measurements Yearbook or Test Critique.

Reviews of the APTICOM were included in the second and third editions of A Counselor's Guide to Career Assessment Instruments (Kapes, & Mastie, 1988, Kapes, Mastie & Whitfield, 1994). Both reviews gave the APTICOM high marks (Botterbusch, 1988; Green, 1994). Green concluded

that the major strengths of the APTICOM are it's quick and easy administration, automated timing and scoring, its contribution to accuracy of administration and scoring, and its face validity with test-takers. Weaknesses he found may be the temptation for schools and agencies to allow administration and interpretation by less qualified persons and relying too heavily on the computer printouts to serve as final recommendation.

Summary Evaluation

Major strengths of CareerScope™, lie in it's easy computer method of delivery, user friendly administration and management of easy to read result files. Although the CareerScope™ delivery is different from APTICOM, the use of the PC/Macintosh make it desirable and easy to use.

Weaknesses potentially lie in the interpretation of results. It's not good enough to hand over a copy of the Assessment Profile to the test taker and tell them, "that's it." This system is designed for qualified counselors to be conducting the interpretation for the individual and assessment profiles are to be provided to the test-taker as part of the counseling session.

The lack of norming data, as well as reliability and validity studies specific to the CareerScope™ PC/Macintosh method of delivery make it's current widespread application premature. The VRI has indicated, (J.A. Harris, Personal Communication, 1/21/98) that they are renorming and revalidating the entire system and are also re-examining test-retest reliability, with anticipated release in of these results in the fall of 1998.

References

Green, J. A. (1994). Review of APTICOM. In J. T. Kapes, M. M. Mastie, & E.A. Whitfield (Eds.), A counselor's guide to career assessment instruments (3rd ed.) (pp.63-70). Alexandria, VA: National Career Development Association.

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